



for GM Linden NJD 002 #6 690

13

September 6, 2016

Mr. Gary Greulich
New Jersey Department of Environmental Protection
Northern Regional Office
7 Ridgedale Avenue
Cedar Knolls, NJ 07927

RE: Remedial Action Progress Report No. 28 for the Retail Redevelopment Area Portion of the Former General Motors (GM) Linden Assembly Plant, 1016 West Edgar Road, Linden, Union County, New Jersey 07036; DUK059.701.0217.

Dear Mr. Greulich:

On May 26, 2009, the New Jersey Department of Environmental Protection (NJDEP) approved the New Jersey Remedial Action Workplan and RCRA Corrective Measures Proposal Addendum No. 1 (RAWP) for the Retail Redevelopment Area of the Former GM Linden Assembly Plant (Site; SRP PI# 014755; EA ID# SUB090001; BFO File Number: 20-09-24). The May 26, 2009 approval letter requested a Remedial Action Progress Report for the Retail Redevelopment Area on/by November 30, 2009. Subsequent reports are submitted on a quarterly basis.

This letter constitutes Remedial Action Progress Report No. 28 for the Retail Redevelopment Area. Hull & Associates, Inc. (Hull) has prepared this report on behalf of Linden Development LLC (Linden Development) to summarize remedial activities completed on the Site between June 1 and August 31, 2016.

Requirements, according to N.J.A.C. 7:26E-6.6, are shown below in **bold italics**, with Hull/Linden Development's update following. The report certification required by N.J.A.C. 7:26E-1.5 is included in Attachment A.

1. NJDEP requires a description of each planned remedial action.

- i. **scheduled to be initiated or completed within the reporting period;**
- ii. **actually initiated or completed during the reporting period; and**
- iii. **scheduled but not initiated or not completed during the reporting period, including the reasons for the noncompliance with the approved schedule.**

Soil

As outlined in the approved RAWP, the remedial activities for soils on the Retail Redevelopment Area consist of the following:

- a. Establishing deed restrictions or environmental covenants to maintain commercial/industrial land use at the Site;
- b. Regrading the site to achieve the grade necessary to support the proposed redevelopment;
- c. Constructing building slabs, parking areas and roadways and placing one foot of clean soil over geotextile fabric in future greenspaces to preclude direct contact exposures to future receptor populations and/or provide cover to historical fill material; and
- d. Surveying to demonstrate that all areas are covered with engineering controls (e.g., building slabs, parking areas and roadways) or one foot of clean soil.

These remedial activities are directly related to construction activities associated with the future redevelopment at the Site which are dependent upon finalization of agreements with end users. Linden



Development has been working on agreements with end users that will occupy various portions of the Site. Given that end user agreements have not been finalized, significant construction activities described in the RAWP have not yet been initiated. Construction support activities that have been conducted thus far included importing fill material, as discussed below.

Fill Material Import Activities

As outlined in previous quarterly reports, Linden Development has previously imported structural fill materials and cover soils from off-site sources for use during the redevelopment consistent with the RAWP and the Revised Soil and Concrete Reuse Proposal (Revision 1.0) approved by NJDEP.

During the current reporting period, no off-site fill materials were imported to the Retail Redevelopment Area.

Groundwater

As outlined in the approved RAWP, remedial actions related to groundwater underlying the overall Retail Redevelopment Area do not appear to be necessary. However, sporadic historical concentrations of lead in limited monitoring wells have exceeded groundwater quality criteria at the Site, as observed in previous groundwater sampling data. As a result, the NJDEP may consider that an indeterminate Classification Exception Area (CEA) is necessary due to these sporadic exceedances and the presence of historical fill at the Site. Based on discussions with Mr. Greulich conducted since November 2009, the indeterminate CEA will be established by NJDEP as part of finalizing the Site NFA and will include the overburden aquifer within the Site boundaries. As discussed on November 18, 2009 and reiterated during ongoing quarterly meetings, Mr. Greulich currently maintains the information necessary to establish the indeterminate CEA (if ultimately deemed necessary) and no additional submittals by Linden Development are required.

As discussed in previous quarterly reports, trichloroethene (TCE), tetrachloroethene (PCE) and 1,1-Dichloroethene (1,1-DCE) were detected in groundwater at concentrations exceeding the NJDEP Class IIA groundwater standards within a limited portion of the proposed Walmart parcel and MW-98 Well cluster within the Retail Redevelopment area. A groundwater permit and CEA will be established for the overburden groundwater zones over a portion of the Retail Development Area in the vicinity of the MW-98 monitoring well cluster. Monitoring wells MW-17S, MW-26S, MW-27S, MW-55S, MW-98S, MW-17D, MW-56D, MW-98D and MW-98B are being sampled on a quarterly basis with the most recent sampling event occurring on August 24, 2016.

Tabulated groundwater analytical results along with the laboratory analytical report for the August sampling event are provided in Attachment B.

On March 7, 2016, the NJDEP Case Manager approved decommissioning a number of monitoring wells on the Retail Redevelopment Area of the Site. The list of monitoring wells approved for decommissioning are provided in the table below.

| Shallow Overburden Wells | Weathered Bedrock Wells | Bedrock Wells |
|--------------------------|-------------------------|---------------|
| MW-62S | MW-8W | MW-8B |
| MW-63S | MW-23W | MW-17B |
| MW-69S | MW-26W | MW-54B |
| MW-78S | MW-27W | MW-55B |
| MW-79S | MW-28W | MW-56B4 |
| | MW-29W | MW-58B |
| | MW-30W | MW-61B |
| | MW-54W | MW-62B |

| | | |
|--|--------|--------|
| | MW-55W | MW-63B |
| | MW-56W | |
| | MW-58W | |
| | MW-61W | |
| | MW-62W | |
| | MW-63W | |
| | MW-69W | |
| | MW-78W | |
| | MW-79W | |
| | MW-88W | |

All of these wells with the exceptions of monitoring wells MW-61B, MW-61W, MW-62B, MW-62W, MW-63W and MW-78S were decommissioned during the current reporting period. The remaining monitoring wells listed above are anticipated to be decommissioned during the next quarterly reporting period.

Storm Sewer (AOI-18)

Remedial activities associated with AOI-18 are complete, as documented in Remedial Action Progress Report No. 1 (November 2009).

2. ***NJDEP requires discussion of problems and delays in the implementation of the RAWP, which should include proposals for corrections.***

As discussed above, remedial activities are directly related to construction activities associated with the future redevelopment at the Site which are dependent upon finalization of agreements with end users. Given current economic conditions, the construction activities described in the RAWP will not be implemented until redevelopment deals with end users are finalized above NJDEP criteria.

Linden Development is continuing to pursue agreements with end users for the Retail Redevelopment Area. In the interim, conditions at the Site are stable given that GM's original cover types (asphalt, building pads, etc.) remain intact.

3. ***NJDEP requires proposals for a deviation from, or modification to, the approved RAWP.***

As discussed with the NJDEP Case Manager on August 25, 2015, it is not anticipated that additional groundwater response actions related to PCE, TCE and 1,1-DCE in shallow groundwater at the proposed Walmart parcel will be required. No deviations from, or modifications to, the approved RAWP are planned or required at this time.

4. ***NJDEP requires submittal of a revised schedule pursuant to N.J.A.C. 7:26E-6.5, to reflect the changes as noted in 1 through 3 above.***

As discussed with the NJDEP Case Manager during previous quarterly meetings, implementation of the site earthwork activities is dependent on finalization of development agreements with end users. Agreements with end users are progressing, but finalization of agreements and the start of site earthwork activities are being delayed by the final appeals process associated with site plan and zoning approvals. Due to the appeals process, work anticipated to begin previously has been delayed. Linden Development will provide NJDEP with a more detailed schedule as the legal appeals are finalized.

5. NJDEP requires an updated status of all permit applications relative to the critical path schedule.

The permits required for initiation of the remedial activities are summarized below.

| Permit/Approval Type | Status | Notes |
|----------------------------|------------------|---|
| Planning Board Approval | Approved 1/9/09 | Site plan approved by City of Linden Planning Board |
| NPDES Permit (Storm Water) | Approved 9/16/09 | NPDES Permit No. 0088323 |
| Soil Conservation District | Approved 9/16/09 | Approved by Somerset-Union Conservation District |

6. NJDEP requires a listing of each remedial action to be performed during the next reporting period.

Agreements with end users are progressing, but finalization of agreements and the start of site earthwork activities are being delayed by the final appeals process associated with site plan and zoning approvals. Due to the appeals process, work anticipated to begin previously has been delayed. Linden Development will provide NJDEP with a more detailed schedule as the legal appeals are finalized.

7. NJDEP requires costs of each remedial action.

- i. **Annual summary of all remedial action costs incurred to date; and**
- ii. **Revised cost estimate for remedial actions remaining to be performed.**

Given that significant construction and remedial implementation has not yet commenced, significant remedial costs have not yet been accrued, with the exception of minor costs for the storm sewer cleaning (i.e., approximately \$7,000) reported in Remedial Action Progress Report No. 1 and approximately \$128,000 for site work grading and seeding activities to date.

The cost estimate for completing remedial activities remains consistent with that presented in the RAWP (i.e., approximately \$7,500,000 for earthwork and construction of engineering controls).

8. NJDEP requires a tabulation of sampling results (according to N.J.A.C. 7:26E-3.13(c)3) received during the reporting period and a summary of the data and any conclusions, presented in a format consistent with N.J.A.C. 7:26E-4.8.

Tabulated groundwater results from the August 2016 sampling event are provided in Attachment B.

9. NJDEP requires a summary of active groundwater remedial actions.

- i. **groundwater elevation maps with groundwater flow shown immediately before and during active groundwater remediation;**
- ii. **graphs depicting changes in concentrations over time for all impacted wells as well as all down-gradient wells;**
- iii. **summary of volume of water treated since last reporting period and the total volume treated since active remedial action commenced; and**
- iv. **Summary of groundwater contamination, indicating either that contamination remains above applicable standards (include a proposal detailing additional remedial actions) or that concentrations are below applicable standards.**

As outlined in the approved RAWP, remedial actions related to groundwater underlying the Retail Redevelopment Area do not appear to be necessary (see discussion under item 1).

10. NJDEP requires a summary of natural remediation groundwater remedial actions.

- i. **Summary table of the groundwater monitoring results collected; and**
- ii. **Conclusions whether data indicate that natural remediation is no longer appropriate (must then also submit a revised RAWP).**

As outlined in the approved RAWP, remedial actions related to groundwater underlying the Retail Redevelopment Area do not appear to be necessary (see discussion under item 1).

11. NJDEP requires a description of all wastes generated as a result of the remedial action.

- i. **Tabulation of waste characterization samples collected, including the physical state of the material, volume, number of samples, analyses performed and results;**
- ii. **Listing of types and quantities of waste generated by the remedial action during the reporting period as well as to date;**
- iii. **Name of the disposal facility used;**
- iv. **Transporters' dates of disposal; and**
- v. **Manifest numbers of each waste shipment.**

Investigative derived waste (IDW) from the August 2016 groundwater sampling events was generated. Waste characterization samples of the IDW were collected and the analytical results reported Appendix C. These non-hazardous drums are currently being staged in the Retail Redevelopment Area and will be removed during the next reporting period.

12. NJDEP requires that any additional support documentation that is available also be provided (photos, etc.).

Given that the majority of the remedial activities have not yet been implemented, no additional support documentation is available.

The next scheduled remedial action progress report will include remedial actions completed September 1, 2016 through November 30, 2016. Please feel free to contact me at (614) 793-8777 with any questions regarding the update provided herein.

Sincerely,



Raymond Kennedy
Senior Project Manager

Attachments

ct: Clifford Ng – U.S. EPA Region 2
David Jennings – Linden Development, LLC
Joseph M. Sorge – J.M. Sorge, Inc.

ATTACHMENT A

Report Certification

Certification

**Linden Development, LLC
ISRA Case Number E20040531-Retail**

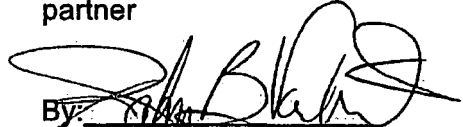
I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Linden Development, LLC, a New Jersey
limited liability company

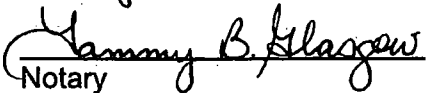
By: Duke Construction Limited
Partnership, an Indiana limited
partnership, its managing member

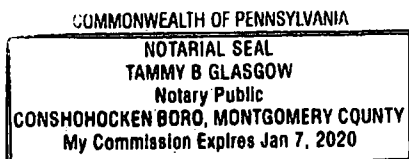
By: Duke Business Centers
Corporation, an Indiana
corporation, sole general
partner

Date: Sept 6, 2016

By: 
John Van Vliet
Vice President, Construction

Sworn to and subscribed to before
me on this 6th day
of September, 2016


Notary



ATTACHMENT B

August 2016 Groundwater Sampling Results

QUARTERLY GROUNDWATER MONITORING RESULTS
DUKE LINDEN RETAIL REDEVELOPMENT AREA
1016 W. EDGAR ROAD, LINDEN, NJ

TABLE 1

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (AUGUST 2016 SAMPLING EVENT)

| Client ID | NJ Higher of | DUK059:EB-1: W082416 | | | DUK059:TB-1: W082416 | | | DUK059:MW-17S: G082416 | | | DUK059:MW-17D: G082416 | | | DUK059:MW-26S: G082416 | | | DUK059:MW-27S: G082416 | | |
|-----------------------------|--------------|----------------------|---|------|----------------------|---|------|------------------------|---|------|------------------------|---|------|------------------------|---|------|------------------------|---|------|
| Lab Sample ID | PQLs and GW | 460-119129-1 | | | 460-119129-2 | | | 460-119129-6 | | | 460-119129-7 | | | 460-119129-3 | | | 460-119129-11 | | |
| Sampling Date | Quality | 08/24/2016 09:35:00 | | | 08/24/2016 09:36:00 | | | 08/24/2016 10:16:00 | | | 08/24/2016 11:21:00 | | | 08/24/2016 07:30:00 | | | 08/24/2016 12:15:00 | | |
| Matrix | Criterion | Water | | | Water | | | Water | | | Water | | | Water | | | Water | | |
| Dilution Factor | 2015 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| Unit | ug/l | ug/l | | | ug/l | | | ug/l | | | ug/l | | | ug/l | | | ug/l | | |
| Monitoring Zone | ug/l | equipment blank | | | trip blank | | | shallow overburden | | | shallow overburden | | | shallow overburden | | | shallow overburden | | |
| VOA-8260C-WATER | | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL |
| WATER BY 8260C | | | | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 30 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 |
| 1,1,2,2-Tetrachloroethane | 1 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 |
| 1,1,2-Trichloroethane | 3 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 |
| 1,1-Dichloroethane | 50 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 |
| 1,1-Dichloroethene | 1 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 |
| 1,2,4-Trichlorobenzene | 9 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 |
| 1,2-Dibromo-3-Chloropropane | 0.02 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 |
| 1,2-Dibromoethane | 0.03 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 |
| 1,2-Dichlorobenzene | 600 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| 1,2-Dichloroethane | 2 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 |
| 1,2-Dichloropropane | 1 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| 1,3-Dichlorobenzene | 600 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 |
| 1,4-Dichlorobenzene | 75 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 |
| 2-Butanone | 300 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 |
| 2-Hexanone | 300 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 |
| 4-Methyl-2-pentanone | NA | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 |
| Acetone | 6000 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 |
| Benzene | 1 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 |
| Bromodichloromethane | 1 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 |
| Bromoform | 4 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| Bromomethane | 10 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| Carbon disulfide | 700 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| Carbon tetrachloride | 1 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 |
| Chlorobenzene | 50 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 |
| Chloroethane | 5 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 |
| Chloroform | 70 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| Chloromethane | NA | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| cis-1,2-Dichloroethene | 70 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 |
| cis-1,3-Dichloropropene | NA | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 |
| Cyclohexane | NA | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 |
| Dibromochloromethane | 1 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| Dichlorodifluoromethane | 1000 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 |
| Ethylbenzene | 700 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 |
| Freon TF | 20000 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 |
| Isopropylbenzene | 700 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 |
| Methyl acetate | 7000 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 |
| Methylcyclohexane | NA | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| Methylene Chloride | 3 | 1.2 | | 0.21 | 0.21 | U | 0.21 | 1.3 | | 0.21 | 1.2 | | 0.21 | 0.21 | U | 0.21 | 0.21 | U | 0.21 |
| MTBE | 70 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 |
| Styrene | 100 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 |
| Tetrachloroethene | 1 | 0.12 | U | 0.12 | 0.12 | U | 0.12 | 0.12 | U | 0.12 | 0.12 | U | 0.12 | 0.12 | U | 0.12 | 0.7 | J | 0.12 |
| Toluene | 600 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 |
| trans-1,2-Dichloroethene | 100 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| trans-1,3-Dichloropropene | NA | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 |
| Trichloroethene | 1 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.3 | J | 0.22 | 0.22 | U | 0.22 | 0.58 | J | 0.22 |
| Trichlorofluoromethane | 2000 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 |
| Vinyl chloride | 1 | 0.06 | U | 0.06 | 0.06 | U | 0.06 | 0.06 | U | 0.06 | 0.06 | U | 0.06 | 0.06 | U | 0.06 | 0.06 | U | 0.06 |
| Xylenes, Total | 1000 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 |
| Total Conc | NA | 1.2 | | | 0 | | | 1.3 | | | 1.5 | | | 1.1 | | | 1.28 | | |

Highlighted Concentrations shown in bold type face exceed limits
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

QUARTERLY GROUNDWATER MONITORING RESULTS
DUKE LINDEN RETAIL REDEVELOPMENT AREA
1016 W. EDGAR ROAD, LINDEN, NJ

TABLE 1

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS (AUGUST 2016 SAMPLING EVENT)

| Client ID | NJ Higher of | DUK059:MW-55S: G082416 | | | DUK059:MW-56D: G082416 | | | DUK059:MW-98B: G082416 | | | DUK059:MW-98D: G082416 | | | DUK059:MW-98D: G082416A | | | DUK059:MW-98S: G082416 | | |
|-----------------------------|--------------|------------------------|---|------|------------------------|---|------|------------------------|---|------|------------------------|---|------|-------------------------|---|------|------------------------|---|------|
| Lab Sample ID | PQLs and GW | 460-119129-4 | | | 460-119129-5 | | | 460-119129-8 | | | 460-119129-9 | | | 460-119129-12 | | | 460-119129-10 | | |
| Sampling Date | Quality | 08/24/2016 08:16:00 | | | 08/24/2016 09:21:00 | | | 08/24/2016 11:05:00 | | | 08/24/2016 10:00:00 | | | 08/24/2016 10:00:00 | | | 08/24/2016 08:35:00 | | |
| Matrix | Criterion | Water | | | Water | | | Water | | | Water | | | Water | | | Water | | |
| Dilution Factor | 2015 | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| Unit | ug/l | ug/l | | | ug/l | | | ug/l | | | ug/l | | | ug/l | | | ug/l | | |
| Monitoring Zone | ug/l | shallow overburden | | | deep overburden | | | bedrock | | | deep overburden | | | deep overburden | | | shallow overburden | | |
| VOA-8260C-WATER | | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL | Result | Q | MDL |
| WATER BY 8260C | | | | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 30 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 |
| 1,1,2,2-Tetrachloroethane | 1 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 |
| 1,1,2-Trichloroethane | 3 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 | 0.08 | U | 0.08 |
| 1,1-Dichloroethane | 50 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.5 | J | 0.24 | 3.3 | | 0.24 | 3.3 | | 0.24 | 1.1 | | 0.24 |
| 1,1-Dichloroethene | 1 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.78 | J | 0.34 | 5.5 | | 0.34 | 5.4 | | 0.34 | 0.34 | U | 0.34 |
| 1,2,4-Trichlorobenzene | 9 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 | 0.27 | U | 0.27 |
| 1,2-Dibromo-3-Chloropropane | 0.02 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 | 0.23 | U | 0.23 |
| 1,2-Dibromoethane | 0.03 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 |
| 1,2-Dichlorobenzene | 600 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 1.3 | | 0.22 | 1.2 | | 0.22 | 0.22 | U | 0.22 |
| 1,2-Dichloroethane | 2 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 |
| 1,2-Dichloropropane | 1 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| 1,3-Dichlorobenzene | 600 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 |
| 1,4-Dichlorobenzene | 75 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 |
| 2-Butanone | 300 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 | 2.2 | U | 2.2 |
| 2-Hexanone | 300 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 | 0.72 | U | 0.72 |
| 4-Methyl-2-pentanone | NA | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 | 0.63 | U | 0.63 |
| Acetone | 6000 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 | 1.1 | U | 1.1 |
| Benzene | 1 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 | 0.09 | U | 0.09 |
| Bromodichloromethane | 1 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 |
| Bromoform | 4 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| Bromomethane | 10 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| Carbon disulfide | 700 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| Carbon tetrachloride | 1 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.56 | J | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 | 0.33 | U | 0.33 |
| Chlorobenzene | 50 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 | 0.24 | U | 0.24 |
| Chloroethane | 5 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 | 0.37 | U | 0.37 |
| Chloroform | 70 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.68 | J | 0.22 | 0.28 | J | 0.22 | 0.26 | J | 0.22 | 0.42 | J | 0.22 |
| Chloromethane | NA | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| cis-1,2-Dichloroethene | 70 | 0.26 | U | 0.26 | 3.6 | | 0.26 | 0.26 | U | 0.26 | 0.43 | J | 0.26 | 0.36 | J | 0.26 | 0.47 | J | 0.26 |
| cis-1,3-Dichloropropene | NA | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 | 0.16 | U | 0.16 |
| Cyclohexane | NA | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 | 0.26 | U | 0.26 |
| Dibromochloromethane | 1 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| Dichlorodifluoromethane | 1000 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 | 0.14 | U | 0.14 |
| Ethylbenzene | 700 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 | 0.3 | U | 0.3 |
| Freon TF | 20000 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 | 0.34 | U | 0.34 |
| Isopropylbenzene | 700 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 | 0.32 | U | 0.32 |
| Methyl acetate | 7000 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 | 0.58 | U | 0.58 |
| Methylcyclohexane | NA | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 | 0.22 | U | 0.22 |
| Methylene Chloride | 3 | 0.27 | J | 0.21 | 1.4 | | 0.21 | 0.4 | J | 0.21 | 0.21 | U | 0.21 | 0.21 | U | 0.21 | 0.31 | J | 0.21 |
| MTBE | 70 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 | 0.13 | U | 0.13 |
| Styrene | 100 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 | 0.17 | U | 0.17 |
| Tetrachloroethene | 1 | 0.12 | U | 0.12 | 0.12 | U | 0.12 | 0.5 | J | 0.12 | 26 | | 0.12 | 26 | | 0.12 | 24 | | 0.12 |
| Toluene | 600 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 | 0.25 | U | 0.25 |
| trans-1,2-Dichloroethene | 100 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 | 0.18 | U | 0.18 |
| trans-1,3-Dichloropropene | NA | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 | 0.19 | U | 0.19 |
| Trichloroethene | 1 | 0.22 | U | 0.22 | 3.6 | | 0.22 | 0.22 | U | 0.22 | 1.3 | | 0.22 | 1.4 | | 0.22 | 1.4 | | 0.22 |
| Trichlorofluoromethane | 2000 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 | 0.15 | U | 0.15 |
| Vinyl chloride | 1 | 0.06 | U | 0.06 | 4.6 | | 0.06 | 0.06 | U | 0.06 | 0.06 | U | 0.06 | 0.06 | U | 0.06 | 0.06 | U | 0.06 |
| Xylenes, Total | 1000 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 | 0.28 | U | 0.28 |
| Total Conc | NA | 0.27 | | | 13.2 | | | 3.42 | | | 38.11 | | | 37.92 | | | 27.7 | | |

Highlighted Concentrations shown in bold type face exceed limits
J : Result is less than the RL but greater than or equal to the MDL an
U : Indicates the analyte was analyzed for but not detected.

ATTACHMENT C

Waste Characterization Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

SUMMARY OF ANALYTICAL RESULTS: 460-115835-1

Job Description: Duke Linden NJ

For:

1016 W. Edgar Road

Linden, NJ

| | | | | |
|-----------------------------|--------------|---------------------|---|------|
| Client ID | NJ Higher of | DUK059:WC-4:W062216 | | |
| Lab Sample ID | PQLs and GW | 460-115835-1 | | |
| Sampling Date | Quality | 06/22/2016 12:20:00 | | |
| Matrix | Criterion | Water | | |
| Dilution Factor | 2015 | 1 | | |
| Unit | ug/l | ug/l | | |
| VOA-8260C-WATER | | Result | Q | MDL |
| WATER BY 8260C | | | | |
| 1,1,1-Trichloroethane | 30 | 0.28 | U | 0.28 |
| 1,1,2,2-Tetrachloroethane | 1 | 0.19 | U | 0.19 |
| 1,1,2-Trichloroethane | 3 | 0.08 | U | 0.08 |
| 1,1-Dichloroethane | 50 | 0.24 | U | 0.24 |
| 1,1-Dichloroethene | 1 | 0.34 | U | 0.34 |
| 1,2,4-Trichlorobenzene | 9 | 0.27 | U | 0.27 |
| 1,2-Dibromo-3-Chloropropane | 0.02 | 0.23 | U | 0.23 |
| 1,2-Dibromoethane | 0.03 | 0.19 | U | 0.19 |
| 1,2-Dichlorobenzene | 600 | 0.22 | U | 0.22 |
| 1,2-Dichloroethane | 2 | 0.35 | J | 0.25 |
| 1,2-Dichloropropane | 1 | 0.18 | U | 0.18 |
| 1,3-Dichlorobenzene | 600 | 0.33 | U | 0.33 |
| 1,4-Dichlorobenzene | 75 | 0.33 | U | 0.33 |
| 2-Butanone | 300 | 2.2 | U | 2.2 |
| 2-Hexanone | 300 | 0.72 | U | 0.72 |
| 4-Methyl-2-pentanone | NA | 0.63 | U | 0.63 |
| Acetone | 6000 | 12 | | 1.1 |
| Benzene | 1 | 0.09 | U | 0.09 |
| Bromodichloromethane | 1 | 0.15 | U | 0.15 |
| Bromoform | 4 | 0.18 | U | 0.18 |
| Bromomethane | 10 | 0.18 | U | 0.18 |
| Carbon disulfide | 700 | 0.22 | U | 0.22 |
| Carbon tetrachloride | 1 | 0.33 | U | 0.33 |
| Chlorobenzene | 50 | 0.24 | U | 0.24 |
| Chloroethane | 5 | 0.37 | U | 0.37 |
| Chloroform | 70 | 0.22 | U | 0.22 |
| Chloromethane | NA | 0.22 | U | 0.22 |
| cis-1,2-Dichloroethene | 70 | 1.2 | | 0.26 |
| cis-1,3-Dichloropropene | NA | 0.16 | U | 0.16 |
| Cyclohexane | NA | 0.26 | U | 0.26 |
| Dibromochloromethane | 1 | 0.22 | U | 0.22 |
| Dichlorodifluoromethane | 1000 | 0.14 | U | 0.14 |
| Ethylbenzene | 700 | 0.3 | U | 0.3 |
| Freon TF | 20000 | 0.34 | U | 0.34 |
| Isopropylbenzene | 700 | 0.32 | U | 0.32 |
| Methyl acetate | 7000 | 0.58 | U | 0.58 |
| Methylcyclohexane | NA | 0.22 | U | 0.22 |
| Methylene Chloride | 3 | 0.21 | U | 0.21 |
| MTBE | 70 | 0.13 | U | 0.13 |
| Styrene | 100 | 0.17 | U | 0.17 |
| Tetrachloroethene | 1 | 0.12 | U | 0.12 |
| Toluene | 600 | 0.25 | U | 0.25 |
| trans-1,2-Dichloroethene | 100 | 0.18 | U | 0.18 |
| trans-1,3-Dichloropropene | NA | 0.19 | U | 0.19 |
| Trichloroethene | 1 | 0.8 | J | 0.22 |
| Trichlorofluoromethane | 2000 | 0.15 | U | 0.15 |
| Vinyl chloride | 1 | 0.06 | U | 0.06 |
| Xylenes, Total | 1000 | 0.28 | U | 0.28 |
| Total Conc | NA | 14.35 | | |

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

X : Surrogate is outside control limits